

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/23/2007 has been entered.

Election/Restrictions

2. Applicant's election with traverse of claims in the reply filed on 2/8/2008 is acknowledged. The traversal is on the ground(s) that the recited species do not lack the same or corresponding special features as argued on pages 1 and 2 of the remarks. This argument was found to be persuasive by the examiner and the restriction requirement has been withdrawn.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John Parzych on 2/21/2008.

Claim 21 (Currently Amended): A system for an apparatus of the type adapted to treat substrates and/or wafers, the system comprising a stationary base element and a movable support for at least one substrate or at least one wafer, the support being rotatable above the element about a stationary axis, the element including a chamber being provided, defined between the element and the support, and at least one duct being provided for the admission of at least one gas-flow to the chamber in order to raise the support, the system comprising means for converting the flow of gas into the chamber into rotation of the support, said means comprising a plurality of channels each of which is defined between the element and the support and is in communication with the chamber, and each of which said channels has a shape and size such that the gas that is present in the chamber, as a result of inward flow of the gas, flows through the channels as a result of pressure in the chamber and causes the support to rotate as a result of fluid-dynamic drive characterized in that each of said channels has a depth that gradually reduces along its extent in a direction away from the said chamber.

Claim 43 (Currently Amended): A system for an apparatus of the type adapted to treat substrates and/or wafers, the system comprising a stationary base element and a movable support for at least one substrate or at least one wafer, the support being rotatable above the element about a stationary axis, the element including a chamber being provided, defined between the element and the support, and at least one duct being provided for the admission of at least one gas-flow to the chamber in order to raise the support, the system comprising means for converting the flow of gas into the chamber into rotation of the support, said means comprising a plurality of channels each of which is defined between the element and the support, each of the channels extending from the chamber and terminating short of an outer groove of the stationary base element, each channel having a shape and size such that the gas that is present in the chamber, as a result of inward flow of the gas, flows through the channels as a result of pressure in the chamber and causes the support to rotate as a result of fluid-dynamic drive characterized in that each of said channels has a depth that gradually reduces along its extent in a direction away from the said chamber.

4. Claims 21-27 and 31-43 are allowed.

Reasons for Allowance

5. The following is an examiner's statement of reasons for allowance: The prior art of record fails to teach or fairly suggest a stationary element including a chamber, at least one duct and a plurality of channels as recited wherein each of the channels has a depth that gradually reduces along its extent in a direction away from the chamber.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-Th during the hours of 8 a.m. and 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

February 26, 2008

/Sylvia R MacArthur/
Primary Examiner, Art Unit 1792

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-20: (Canceled)

Claim 21 (Currently Amended): A system for an apparatus of the type adapted to treat substrates and/or wafers, the system comprising a stationary base element and a movable support for at least one substrate or at least one wafer, the support being rotatable above the element about a stationary axis, the element including a chamber being provided, defined between the element and the support, and at least one duct being provided for the admission of at least one gas-flow to the chamber in order to raise the support, the system comprising means for converting the flow of gas into the chamber into rotation of the support, said means comprising a plurality of channels each of which is defined between the element and the support and is in communication with the chamber, and each of which said channels has a shape and size such that the gas that is present in the chamber, as a result of inward flow of the gas, flows through the channels as a result of pressure in the chamber and causes the support to rotate as a result of fluid-dynamic drive characterized in that each of said channels has a depth that gradually reduces along its extent in a direction away from the said chamber.

22. (Previously presented): A system according to Claim 21, in which the chamber is substantially closed both when the support is stationary and when the support is in motion.

23. (Previously presented): A system according to Claim 21, in which said means comprise at

least one duct outlet for a gas-flow, in which said outlet opens into the chamber and is configured in a manner such that the emerging gas-flow is skew relative to the axis of rotation of the support.

24. (Previously presented): A system according to Claim 23, in which said means comprise two duct outlets for two gas-flows, in which said outlets open into the chamber in positions that are preferably symmetrical with respect to the axis of rotation of the support and are configured in a manner such that the two emerging gas-flows are skew and preferably symmetrical with respect to the axis of rotation of the support.

25. (Previously presented): A system according to Claim 21, in which said means comprise at least one duct outlet for a gas-flow, in which said outlet opens into the chamber and is configured in a manner such that the emerging gas-flow is substantially parallel to the axis of rotation of the support.

26. (Previously presented): A system according to Claim 25, in which said means comprise two duct outlets for two gas-flows, in which said outlets open into the chamber in positions that are preferably symmetrical with respect to the axis of rotation of the support and the outlets are configured in a manner such that the two emerging gas-flows are substantially parallel to the axis of rotation of the support.

27. (Previously presented): A system according to Claim 25, in which the surface of the support which delimits the chamber is shaped in a manner such that a gas-flow parallel to the axis of rotation of the support transmits a tangential force to the support.

28-30. (Canceled)

31. (Previously presented): A system according to Claim 21, in which the chamber has a

substantially cylindrical shape and the channels are substantially straight and tangential to the profile of the chamber.

32. (Previously presented): A system according to Claim 21, in which the chamber is formed entirely in the element.

33. (Previously presented): A system according to Claim 21, in which the channels are formed entirely in the element.

34. (Previously presented): A system according to Claim 32, in which the element has a circular recess adapted to house the support rotatably, in which the chamber is formed in the element in a central zone of the recess, and in which the channels are formed in the element in a peripheral zone of the recess.

35. (Previously presented): A system according to Claim 21, in which a pin/hole pair is provided on the element/support pair, for the mechanical restraint of the rotation of the support above the element.

36. (Previously presented): A system according to Claim 21, characterized in that it is substantially symmetrical with respect to the axis of rotation of the support.

37. (Previously presented): A system according to Claim 21, in which the element is adapted to constitute a slide of a treatment chamber of a treatment apparatus.

38. (Previously presented): A system according to Claim 21, in which the support is adapted to also act as a susceptor.

39. (Previously presented): A reactor for the epitaxial growth of semiconductor materials on substrates, characterized in that it comprises a support system for substrates according to Claim 21.

40. (Previously presented): An apparatus for the thermal treatment of wafers at high temperature, characterized in that it comprises a support system for wafers according to Claim 21.

41. (Previously presented): A system according to Claim 33, wherein each of the channels has a maximum depth and a minimum depth, wherein the maximum depth of at least one of the channels is more centrally located in the element than the minimum depth of the at least one channel.

42. (Previously presented): A system according to Claim 41, wherein the maximum depths of the channels are more centrally located in the element than the minimum depths of the channels.

Claim 43 (Currently Amended): A system for an apparatus of the type adapted to treat substrates and/or wafers, the system comprising a stationary base element and a movable support for at least one substrate or at least one wafer, the support being rotatable above the element about a stationary axis, the element including a chamber being provided, defined between the element and the support, and at least one duct being provided for the admission of at least one gas-flow to the chamber in order to raise the support, the system comprising means for converting the flow of gas into the chamber into rotation of the support, said means comprising a plurality of channels each of which is defined between the element and the support, each of the channels extending from the chamber and terminating short of an outer groove of the stationary base element, each channel having a shape and size such that the gas that is present in the chamber, as a result of inward flow of the gas, flows through the channels as a result of pressure in the chamber and causes the support to rotate as a result of fluid-dynamic drive characterized in that each of said channels has a depth that gradually reduces along its extent in a direction away from the said chamber.

Application/Control Number: 10/538,547
Art Unit: 1792

Page 10